Neural Stem Cell Relays for Severe Spinal Cord Injury

Grant Award Details

Neural Stem Cell Relays for Severe Spinal Cord Injury

Grant Type:	Quest - Discovery Stage Research Projects
Grant Number:	DISC2-10665

Investigator:		
	Name:	Mark Tuszynski
	Institution:	University of California, San Diego
	Type:	PI

Disease Focus:	Spinal Cord Injury, Neurological Disorders
Award Value:	$1,905,173
Status:	Pre-Active

Grant Application Details

Application Title: Neural Stem Cell Relays for Severe Spinal Cord Injury

Public Abstract:

Research Objective

We propose to utilize human neural stem cells to form neuronal relays across sites of severe SCI, restoring function across the site of spinal cord injury.

Impact

We will develop a specific type of neural stem cell that is best suited for repairing the injured spinal cord.

Major Proposed Activities

- In Vitro Assessment of GMP-compatible H9-scNSC Batches.
- In Vivo Assessment of GMP-compatible H9-scNSC Batches.
- In Vivo Assessment of Disease Modifying Activity over time, Model 1: T10 moderate contusion.
- In Vivo Assessment of Disease Modifying Activity over time, Model 2: T3 severe compression.
- In Vivo Assessment of Disease Modifying Activity over time, Model 1: C5 moderate contusion.
- FDA Pre-pre IND Meeting.

Statement of Benefit to California: Spinal cord injury (SCI) affects approximately 300,000 people in the U.S., with more than 11,000 new injuries per year. This research plan will examine a novel therapeutic strategy for SCI. Neural stem cells will be generated from human embryonic stem cells and grafted into animal models of SCI. We predict neuronal relays will form across a SCI lesion site that will mediate behavioral recovery. These studies will form the basis for clinical translation for the treatment of spinal cord injury.